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SEQ ID NO. 6.

RESULT 2
US-08-968-685A-9
; Sequence 9, Application US/08968685A
; Patent No. 6214981
; GENERAL INFORMATION:
; APPLICANT: TUCKER, KENNETH
; APPLICANT: PLOSILA, LAURA
; TITLE OF INVENTION: MORAXELLA CATARRHALIS OUTER MEMBRANE
; TITLE OF INVENTION: PROTEIN-106 POLYPEPTIDE, GENE SEQUENCE AND USES THEREOF
; NUMBER OF SEQUENCES: 21
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: PENNIE & EDMONDS LLP
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: USA
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/968,685A
; FILING DATE: No. 6214981ember 12, 1997
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:

NAME: Baldwin, Geraldine F.
REGISTRATION NUMBER: 31,232
REFERENCE/DOCKET NUMBER: 7969-060
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8854
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
LENGTH: 9542 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: DNA
US-08-068-685A-9

Query Match	63.9%;	Score 3924.6;	DB 4;	Length 9542;
Best Local Similarity	79.5%;	Pred. No. 0;		
Matches 5108; Conservative	0;	Mismatches	979;	Indels 336; Gaps 26;

Qy	1	atgaatcacatctataaagtcattttaaaagccacagcaccatttattgagcagtggca	60
Db	218	ATGAATCACATCTATAAAGTCATCTTTAACAAAGCCACAGGCACATTTATGGCGCTGGCG	277
Qy	61	agtagcgcgaatccacacagcacgggggggtagctgctacagggcaagttygcag	120
Db	278	GAATATGCCAATCCACAGACAGGGGGGGTAGCTGTCTACAGGCAAGTTGGCAGT	337
Qy	121	gtatgcactctgagctttgcccgctattccgcgcctgcgtctctctgtagtcggtgcacg	180
Db	338	GTAGCGACTCTGAGCTTTGGCCGTATTCCCGCGCTCGCTCTCTCGTGAATCGGTGGCAGC	397
Qy	181	ctcagtggcagtgcttatgtctcaaaaaaagataccaaacatatcgcgaattggtagcaaa	240
Db	398	CTCAATGGCAGTGTATTATGC-----AGGTATCGGAATTTAGTGAACCA	439
Qy	241	aaccagcgaagcgtctcaggcactcccaagcggcggtagctgacgaccattgctattggt	300
Db	440	GACGGGGGAA-----AAGCGGAGCCAATGCGCGGTGATAAATCCATTGCTATTGGT	493
Qy	301	gaaatgtctaaacgcacagggcggtcaagccatcgccatcggtagtagtaataaaactgtc	360
Db	494	GATATTGCTCAGSCACTTGGCTCTCAATCTATTGTATTCGGTGACAAACAAATAGTTCAT	553
Qy	361	aatggaagcagtttgataagtagtagtaccgatgctacgggtcaagagtcaccatgccatc	420
Db	554	AATTCAAATAAATAAGTCTAATATAGGTGCCAAGCCTCAGGTAATGAGTCCATGCCATC	613
Qy	421	ggtagtgatataaagctagtggtgctcgattgccatcggtagtgatgacttacat	480
Db	614	GGTGTGATGATATTTGGCTTCTGGCTCATGCTCGATTGCCATCGGTAGTGATGACTTATAT	673
Qy	481	ttgcttgatcagcatggtgaatcctaacaatccgaaggctactctgattaacgacttatt	540
Db	674	TTGAAAAAGGAACGGTACAGC-----AAATCTCAGAGTCTTCTAGCTATTATT	721
Qy	541	aacggccatgcagtattataaagaata---cgaagctcaaaagataaatgatataaaat	597
Db	722	CGCGGCACAGAAAGCATTTAAACGATATATACCACTAGCTGCACACTATTCTTCAAAAATAT	781
Qy	598	agacgcacaacgcgaagcagccagtcactgcagttggagccatgcatatgcacag	657
Db	782	AGAGGCACACACGACAGGACAGCCAGTACTTGCAGTGGGAGCCCATGTCATATGCAAG	841
Qy	658	ggtcattttccacgccttggtagacagggcacaacagctaaaagtgccctattccttggca	717
Db	842	GGTCATTTTTCCAACGGCTTTGGTACACGGGGCAACAGCTGAAGGTACCTATTCTCTTGGCA	901
Qy	718	gtgggtcttgcgcgcacagccgagggccaatctacaatcgtatttgggtctgatgaaca	777
Db	902	GGTCTGCTTTACCGCCACAGCCAAAGCATCTTCATCTGTTGGTCTCTAATGACAA	961

QY	778	tctagctcgttggagcagatagcccttggtagcaggtagctcgtctcaggtacaggtcagggcagct	837
DB	962	CTATCGGGTTTCACGGACAGCGGTTGGTGAAGTACTCAAGTTAATTGAATCGAGGT	1021
QY	838	attgcctagggtcaaggttctgttgcactcagagtgataataat	885
DB	1022	ATTGCCTAGGTTTGGTCTCAGGTCCCTTCAGAAGGATAATGATGTAAATGCAGCAAT	1081
QY	886	agaccggcctatacaca---ataccagcgactagaccccaagtttcaagccac---c	939
DB	1082	GTACGGGGCCTATGACACAGATGATACCCAGCCATAGACAAACUGTATAAAGCCACCTTC	1141
QY	940	aataatacgaagcggggtcccacttccattcgttagta------actctatcaaa	987
DB	1142	AAGAAATGGTCTACGGATGTATTTCCTATGGTAAATAGTAAATGGGAATGACAGTATCAGG	1201
QY	988	cgtaaatcatcaatgtccggtcgaagtgtaataaaaccgatcgggtcaaatgtggcacag	1047
DB	1202	CGTAAATTCATCAATGTCGGTGCAGGTTCTGCGGATACCGATCGCGTCAATGTGGCACAG	1261
QY	1048	ctagaagcgggtgggtgaagtgggcgtlaaagagcgtagaattacttttcagggtgatataac	1107
DB	1262	CTTAAAGAGGGGTGAGCGTGCGCTA--ATCGTCAAAATTACTTTTAAAGGGTGATGATAGC	1318
QY	1108	agtactcagctaaataataggttttgataataactttaactttaaagtggtgcagagacc	1167
DB	1319	AATAATAGTAGTAAAGAAAGGTTTGGCAAGACTTTAACTATACAGAGTGGTGCACAGCC	1378
QY	1168	aagcattaaaccgataataatcgggtggtgaagagcgtgatataatagtggtctgaaa	1227
DB	1379	AGCGCATTAACCGATCATTAACATCGGTGGTGATACAAATGCGCA-----TGGTCTGAAA	1432
QY	1228	gttaaacctgtcaaaactttaaacatcttactgagggtgaatacaactacattaaatgcc	1287
DB	1433	GTTCAACTTGCTGAACTTTAACCCAGCCTTAAATGGTTACCACTGAAACCTAACCGCC	1492
QY	1288	acaaaccaagtttaaggttaggttagtagtagtactacagctga-----	1331
DB	1493	AACGAGAAAGTATCCGCTAGGCAAAACCCGCCCTTACCACAGATAAAATTTGGTTTACCANT	1552
QY	1332	-----attatigagttagtttaacctttaccagccca-----ataca	1371
DB	1553	GATATGAATGGCATTTGATGAAGCAAAACCTTATCTTGATAAAGACACTGGCATTCATGCA	1612
QY	1372	ggcagtcgaagcacagaacaccgtctatggcgttaatgggggtgaaagttaactaataat	1431
DB	1613	GGTGGTCANAAGATTACCAAACTTACTGCTGGTGTAGTAGAGTAGCGCAACTTAT	1672
QY	1432	cgaaaaacaacgcagcgaactcggcactactcgtattacc-----agagataaa	1479
DB	1673	GGACAGCTTTAAAAAGATTTAACCAAAACCGCTGAAGTGCTCTACAACCTTTACGGTTAAA	1732
QY	1480	attggcttgcgcagatgggtgagtgatgataaaacaagcaccatatttgataaaaaa	1539
DB	1733	AAGGTAGATAAAAATGGTAATGATGCTAATGTATGACAGCAAAATCATCACCGTGGTAAAAAT	1792
QY	1540	caactlaaagtggttagtgttgccaattaccata-----gacaatggcattgat	1587
DB	1793	AACAACCCAGCGGTACTCAAGTCAACACCCCTAAAACCTCAAAAGGTGAAAAACGGTGTGAT	1852
QY	1588	gcaggttaataaaagatcagtaatcttgcgaaggttagcgtgctcaacgatcgggtacc	1647
DB	1853	GTTACAACCGAAACAAATGGTACAGTTACCTTTTGGCCTTAACCAAAATACGGTCTGACC	1912
QY	1648	atcgaacagctcaaacgcccgcaagcctactttaaacgcagcgcgctggcactcagtgctaca	1707
DB	1913	GTTTGGCAACAGCACCCCTAAACAACGATGGGCTTTATCTGTTTAAAAACCACTATGTAACAA	1972
QY	1708	cctactgaatatcagtttgatgcttaagatggcgaatgttaccgcccccaacttacaacatt	1767
DB	1973	CAAAATCCAAAGTGGTGTGTATGCACTTACATTTACTTGATATCAGCAATAGTAGGCAGGT	2032
QY	1768	q-----gcgtgaaaaaccaccgaggtctaaacagtgatggcactagtgataaaattagttgt	1821

QY	3799	gtgctaagcgcaggcttttaactctgaagggcaatggtgaagcggattgactttgtctccact	3855
Db	4244	GTGCTAAGCGCAGGCTTTAACTTGCAGGCAATGGTGAAGCGGTGACTTTGTCTCCACT	4303
QY	3859	tatgacacgcgtcaacttttgcgattgccaatgccaacccgctaaggctgaacctatgatgac	3918
Db	4304	TATGACACTGTCAACTTTGCCGATGGCAATGCCACCACCGCTAAGGTGACTATGATGAC	4363
QY	3919	acaagcaaaaacagctaaagtggtctatgattgataatggatgatacaaacattgaagtt	3978
Db	4364	ACACGCAAAACCGCTAAAGTGGTCTATGATGCTCAATGTGGATGATACACCACTTGAAGTT	4423
QY	3979	aaagataaaaaacttggcgtaaaacccaccacatttgaccagtgactggcagatgctaat	4038
Db	4424	AAAGATAAAAACCTTGGCGTTAAAAACACCACACATTGACCAGTACTGSCACAGGTGCTAAT	4483
QY	4039	aaatttgcctaagaacaatacgaactactgaggatgctgttcaaggccagtgatatcgtt	4098
Db	4484	AAATTTGGCCCTAAGCAATCAAGCTACTTGGCGATGGCGTTGCTCAAGGCCAGTGATATCGTT	4543
QY	4099	gtctatctaaacacacctatcttggcgacatccaaactccaaaggggccaagcgaac	4158
Db	4544	GCTCATCTTAACACCTTATCTTGGCGACATCCAAACTGCCAAAGGGCAAGCCAAAGCGAAC	4603
QY	4159	aactcagcaggctatgttgatgtctgatggcaataaggatcatctatgacagtaccgataac	4218
Db	4604	AGCTCAGCAGGCTATGTGGATGCTGATGGCAATAAGGTATCTATGACAGTACCGGATAAC	4663
QY	4219	aagtactataagccaaaatgatggcacagttgataaaacaaaagaattggccaagac	4278
Db	4664	AAGTACTATCAAGCCAAAATGATGGCACAGTTGATTAACCAAAAGAAAGTTGCCAAAGAC	4723
QY	4279	aaacttggctgcgaagcccaaacccccagatggcacatttggctcaaatgtaattgcaaatca	4338
Db	4724	AAACTGTGTGCCCAAGCCCCAACCCCAAGATGGCCACATTTGGCTCAATGAATGTCAANTCA	4783
QY	4339	gtcattaacaaagaacaaagtaaatgatgccaataaaagcaagcgatcaatgaagacaac	4398
Db	4784	GTCATTAAACAAAGAACAAAGTAAATGATGGCAATAAAAAGCAAGGCATCAATGAAGACAAC	4843
QY	4399	gcctttgttaaaggacttgaaaaagccgctcttcgtataacaaaacccaaaagccgcagta	4458
Db	4844	GCCTTTGTTTAAGGACTTTGAAAAAGCCGCTTCTGATTAACAAAAACCAAAACGCCGACGTA	4903
QY	4459	acttgggtgatttaaatgcccgttggccaaacaccgcctgacctttgcaggggatacagcc	4518
Db	4904	ACTGTGGGTGATTTAAATGCCGTTGCCCAACACCCGTGACCTTTGCAGGGGATACAGGC	4963
QY	4519	acaacggtataaaactgggcgagactttgaccatcaaggtgggcaaacagacacccaat	4578
Db	4964	ACAACGGCTAAAAACCTGGCGAGACTTTGACCATCAAAAGTGGCAACAGACACACCAAT	5023
QY	4579	aagctaaccgataataacatcggttgtgtgagcagggtactgatgggttcactgttcaacctt	4638
Db	5024	AAGCTTAACCCGATAATAACATCGGTGTGGTAGCAGGTACTGATGGCTTCACTGTGCAAACTT	5083
QY	4639	gccaagacctaaaccaatttaacagcgttaatgacaggtggccaaaattgatgacaaa	4698
Db	5084	GCCAAAGACCTTAACCAATCTTAAACAGCGTTTAATGACAGGTGGTACCATAATGATGACAAA	5143
QY	4699	ggcgtgtctttgtagactcaagcgggtcaagccaaagcaaacacccctgtgctcaagtgc	4758
Db	5144	GCGGTGCTTTTGTAGACTCAAGCGGTCAAGCCNAAGCAAAACCCCTGTGCTAAGTGGCC	5203
QY	4759	aatgggcttggacctgggtggcgaaggtcatcagtaaatgtggggcaagggcacaagaatacc	4818
Db	5204	AATGGGCTTGGACCTGGGTGGCAAGCTCATCAGCAATGTGGGGCAAGGCACAAAGACACC	5263
QY	4819	gacgcctgccaatgtacaacaaglaaacqaaglacgcaacttgttgggtcttggtaatgct	4878
Db	5264	CACGCTGCCAATGTACAACAGTTAAACGAAGTACGCAACTTTGTGGGTCTTGTAATGCT	5323

Db 6404 ||||| CCACAAGCCTACATTCTGGCAGATCCATGGTTACCGGGGGTATTGCCACCCACAACGGT 6463
Qy 6019 caaggtgcggtggcagtgaggactgtcgaagctgtcggataatggccaatgggtattttaaa 6078
Db 6464 ||||| CAAGGTGCGGTGGCAGTGGGACTGTGGAAGCTGTCGGATAATGGTCAATGGGTATTTTAAA 6523
Qy 6079 atcaatgggttcagccgatacccaaggccatgtaggggaggcagttgggtgcaggtttttcac 6138
Db 6524 ||||| ATCAATGGTTCAGCCGATACCCAAGGCCATGTAGGGGCGGCAGTTGCTGCAGGTTTTCAC 6583
Qy 6139 ||||| ttt 6141
Db 6584 ||||| TTT 6586

-619-6.rng

Claim 14: Fig 6: 109pp: English.

PS A genomic DNA fragment (T38740) of Moraxella catarrhalis otitis
 XX media strain 4223 includes the coding region for a 1992-amino
 CC acid protein (W04505) identified as an approx. 200 kDa outer
 CC membrane protein (OMP). The DNA was isolated from a strain 4223
 CC genomic library in phage lambda EMB3 by screening with an
 CC anti-200 kDa protein guinea pig antiserum. The gene can be
 CC used for the recombinant expression of the OMP (for use in
 CC vaccines), for the prep. of hybridisation probes, or may be
 CC incorporated into a live vector for use in direct immunisation.
 XX
 SQ Sequence 6971 BP: 2265 A; 1553 C; 1533 G; 1620 T; 0 other;

Query Match	99.8%	Score 6130;	DB 17;	Length 6971;
Best Local Similarity	100.0%	Pred. No. 0;		
Matches 6141;	Conservative	0;	Mismatches	0;
			Indels	1;
			Gaps	1;

QY	1	atgaatcacatctataaagtcattcttaacaaagccacagggcacattttgagtgcca	60
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QY	61	gagtagcgcacaaatccacacagcac-gggggggggtagctgtctacagggcaagtgtgcag	119
DB	600	gagtagcgcacaaatccacacagcac-gggggggggtagctgtctacagggcaagtgtgcag	659
QY	120	tgtatgcaactctgagctttcccgctattgcgcgctgcgtctgcgtctgcgtctgcgt	179
DB	660	tgtatgcaactctgagctttcccgctattgcgcgctgcgtctgcgtctgcgtctgcgt	719
QY	180	gctcagtgccagtgcttctatgctcaaaaaagataccaaacacatcgaattgtggaaca	239
DB	720	gctcagtgccagtgcttctatgctcaaaaaagataccaaacacatcgaattgtggaaca	779
QY	240	aaaccagcgaagcgtcagcagcagcagcagcagcagcagcagcagcagcagcagcagc	299
DB	780	aaaccagcgaagcgtcagcagcagcagcagcagcagcagcagcagcagcagcagcagc	839
QY	300	tgaataatgctaacgacagcagcagcagcagcagcagcagcagcagcagcagcagcagc	359
DB	840	tgaataatgctaacgacagcagcagcagcagcagcagcagcagcagcagcagcagcagc	899
QY	360	caatggaagcagtttgataagtagtgatcccgatgctacgggtcgaagagtcacagccat	419
DB	900	caatggaagcagtttgataagtagtgatcccgatgctacgggtcgaagagtcacagccat	959
QY	420	cggtggtgatgaaaggctagtggtgctgcctgcgtgctgcctgcgtgctgcctgcct	479
DB	960	cggtggtgatgaaaggctagtggtgctgcctgcgtgctgcctgcgtgctgcctgcct	1019
QY	480	tttgcttgatcagcagtggttaattcttaaacatccgaaggtactctgattacagcattat	539
DB	1020	tttgcttgatcagcagtggttaattcttaaacatccgaaggtactctgattacagcattat	1079
QY	540	taacggccatgcagttataaaagaaatacgaagctcaaaagataatgataataatag	599
DB	1080	taacggccatgcagttataaaagaaatacgaagctcaaaagataatgataataatag	1139
QY	600	acgcacaaccgacagcagcagcagcagcagcagcagcagcagcagcagcagcagcagc	659
DB	1140	acgcacaaccgacagcagcagcagcagcagcagcagcagcagcagcagcagcagcagc	1199
QY	660	tcattttccaaacgctttgttacacgggcaacagcagcagcagcagcagcagcagcagc	719
DB	1200	tcattttccaaacgctttgttacacgggcaacagcagcagcagcagcagcagcagcagc	1259
QY	720	gggtcttgcgcacagcagcagcagcagcagcagcagcagcagcagcagcagcagcagc	779
DB	1260	gggtcttgcgcacagcagcagcagcagcagcagcagcagcagcagcagcagcagcagc	1319
QY	780	tagctggtgagcagcagcagcagcagcagcagcagcagcagcagcagcagcagcagc	839

Seq ID No. 6

3:SUULT 3
 AT38740
 J AAT38740 standard: DNA; 6971 BP.
 X
 X AAT38740;
 X
 X 25-JAN-1997 (first entry)
 X Moraxella outer membrane protein gene.
 X Outer membrane protein; OMP; immunogen; vaccine; otitis media;
 W diagnosis; ss.
 X Mycobacterium catarrhalis strain 4223.
 S
 X Key Location/Qualifiers
 H 706..6684
 T CDS /*tag- a
 T
 X W09634960-A1.
 X
 X 07-NOV-1996.
 X
 X 29-APR-1996; 96WO-CA00264.
 X
 X 26-MAR-1996; 96US-0621944.
 PR 01-MAY-1995; 95US-0431718.
 PR 07-JUN-1995; 95US-0478370.
 X
 X (CONN-) CONNAUGHT LAB LTD.
 X
 X Chong P, Harkness RE, Klein MH, Loosmore SM, Sasaki K;
 X WPI; 1996-506162/50.
 DR P-PSDB; AAW04505.
 X
 X Moraxella outer membrane protein - useful as immunogen in protective
 X vaccine and for diagnosis

Db	1320	tagctcgttgaggcagtagcccttggtgcaggtagctactcgtgcagctacagggcagtat	1379
Qy	840	tgccctagggtcaagggttcctgttctcactcagaagtataataatctctagaccggccctatac	899
Db	1380	tgccctagggtcaagggttcctgttctcactcagaagtataataatctctagaccggccctatac	1439
Qy	900	accaaaataccagggcactagaccccaagtttcaagccaccaataataacagaaagcgggtcc	959
Db	1440	accaaaataccagggcactagaccccaagtttcaagccaccaataataacagaaagcgggtcc	1499
Qy	960	actttccattggttagtaactctataaaccgtataaaatcctatcgtcgggtcgaagggttaa	1019
Db	1500	actttccattggttagtaactctataaaccgtataaaatcctatcgtcgggtcgaagggttaa	1559
Qy	1020	taaaacccaatgcgggtcgaatggtgcacagctagaagcgggtgggtgaagtgggctaaaggagcg	1079
Db	1560	taaaacccaatgcgggtcgaatggtgcacagctagaagcgggtgggtgaagtgggctaaaggagcg	1619
Qy	1080	tagaattacttttcagggtgagtataacagtagtactgacgtataaaataggttttggtataatac	1139
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Qy	1140	tttaactattaaagggtgcagagacccaacgattaaaccgataataatcctcgttggtgt	1199
Db	1680	tttaactattaaagggtgcagagacccaacgattaaaccgataataatcctcgttggtgt	1739
Qy	1200	aaaagggtgatataatagttggtctctgaaagttaaactttgctaaaaactttaaacaactctac	1259
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Qy	1260	tgagggtgaatacaactacattaaaatgccacaaccacagtttaaggttaggttagtagtagtag	1319
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Qy	1320	tactacagctgaattattgagtgagtagtttaacctttaccagcccaatacaggcagtcac	1379
Db	1860	tactacagctgaattattgagtgagtagtttaacctttaccagcccaatacaggcagtcac	1919
Qy	1380	asgcacaagcaaaacgcgtctatggcggttaattgggggtgaagtttactaataatgcagaaac	1439
Db	1920	asgcacaagcaaaacgcgtctatggcggttaattgggggtgaagtttactaataatgcagaaac	1979
Qy	1440	asgcacaagcaaaacgcgtctatggcggttaattgggggtgaagtttactaataatgcagaaac	1499
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Qy	1560	tgcaattaccatagacaatggcattgtatgcaggtaataaaaaagatcagtaaatcttgccaa	1619
Db	2100	tgcaattaccatagacaatggcattgtatgcaggtaataaaaaagatcagtaaatcttgccaa	2159
Qy	1620	aggtagcagtgctaacagatgcgggttacacactcgaacagctcaaaagcccgccagctacttt	1679
Db	2160	aggtagcagtgctaacagatgcgggttacacactcgaacagctcaaaagcccgccagctacttt	2219
Qy	1680	aaaacgaggcgctggccatcagtgctcacacacttgaataatcagttcagttcagtagtggtg	1739
Db	2220	aaaacgaggcgctggccatcagtgctcacacacttgaataatcagttcagttcagtagtggtg	2279
Qy	1740	caatgttacgcgcccaacttacaacattggcggtgaaacccacgcagcttaaacagtgatgg	1799
Db	2280	caatgttacgcgcccaacttacaacattggcggtgaaacccacgcagcttaaacagtgatgg	2339
Qy	1800	cactagtgataaaattagttttaaggtagtggtacgaacaatagatttagttaccgcgga	1859
Db	2340	cactagtgataaaattagttttaaggtagtggtacgaacaatagatttagttaccgcgga	2399
Qy	1860	acatttggcagaagctatcctaaatgaagtcgaacgagcgtgcagtgctctacaagctt	1919
Db	2400	acatttggcagaagctatcctaaatgaagtcgaacgagcgtgcagtgctctacaagctt	2459

QY	1920	tacogttaaagaagaacgatgatgacgccaacgctctaccogtggctaaagatacagc	1979
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QY	1980	aaaaaatgcccgcagtcagcatcttataaactcaaaaggtaaaaacggtctaacgggttcg	2039
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